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December 15, 2004

Ms. Dorothy Shimer  
Research Division  
Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812

Re: Re-submittal of Comments to Draft Report on Indoor Air Pollution  
(Keeley, AB 1173)

Dear Ms. Shimer:

In response to your request for public comments on the revised draft Report on Indoor Air Pollution (Keeley, AB 1173), I respectfully re-submit comments from the Hearth, Patio & Barbecue Association ("HPBA") dated September 1, 2004. We have reviewed the revised draft report and it appears that it does not reflect any of the comments that we submitted in September. I urge you to review and respond to our original comments, which are enclosed with this letter.

I look forward to your prompt response and will continue to follow up and ensure that our comments are being sufficiently addressed by the Air Resources Board and the scientific peer review council that is reviewing the report.

If you have any questions, please do not hesitate to contact me at (703) 522-0086, x23 or [goldman@hpba.org](mailto:goldman@hpba.org) or John Crouch in our Sacramento office at (916) 536-2390 or [crouch@hpba.org](mailto:crouch@hpba.org).

Sincerely yours,

Jack H. Goldman, Ph.D.  
General Counsel/Director of  
Government Affairs

Enclosure

HPBA/GA2/339



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September 1, 2004

Mr. Richard Bode  
Chief, Health and Exposure Assessment Branch  
Air Resources Board  
1001 I Street  
Sacramento, California 95812

Re: Draft Report on Indoor Air Pollution (Keeley, AB 1173)

Dear Mr. Bode:

On behalf of the Hearth, Patio & Barbecue Association ("HPBA") and its two Affiliates in California, HPBA Pacific and HPBA Pacific, South ("the Affiliates"), I wish to submit the following comments in response to the Draft Report to the California Legislature, Indoor Air Pollution in California (Keeley, AB 1173; "Draft Report"). HPBA and the Affiliates represent the manufacturers, manufacturers representatives, distributors, and retailers of fireplaces and wood stoves in North America. We are most interested in the provisions of the Draft Report dealing with indoor combustion sources, particularly fireplaces and wood stoves ("hearth products").

As discussed in the Draft Report, AB 1173 requires the Air Resources Board to summarize the best scientific information available on indoor air pollution, existing regulations and industry practices, and to summarize options for mitigation of pollution sources in schools, workplaces, and homes. We have reviewed the information presented in the Draft Report with regard to hearth products, and would like to make the following comments in the spirit of improving the quality of the information in the final report.

These comments will present four points. First, the Draft Report overestimates the contribution of emissions to the indoor environment from wood stoves because it has not clearly considered the effect of the introduction, and requirement, of certified wood stove technology. Second, the draft does not establish the contribution of contaminants in the ambient air to indoor air quality, and without doing so makes recommendations on control technologies that are unsupported. Third, we question the identification of fireplaces, and perhaps wood-fueled fireplaces, to carbon monoxide loadings in the indoor air environment. Finally, the relatively high ranking of hearth products in mitigation measures must be changed, due primarily to product redesign that is already more than ten years old (e.g., certified wood stove technology) and product redesign that is well underway. Each of these points will be discussed below.

I. The Draft Report Does Not Distinguish Between Conventional and Certified Wood Stoves, and In So Doing Overestimates the Emissions of Wood Stoves.

Section 2.3.8.2., on Sources of PAHs [polynuclear aromatics], states that:

Woodburning appliances contribute to indoor PAH levels. Fireplaces can emit soot and PAHs directly into the indoor environment (Traynor et al., 1987). While the newer, more efficient airtight stoves appear to emit less than the older, leakier woodstove models, poor maintenance and certain practices, such as operating the woodstove with the door open, can raise PAH levels substantially (Traynor et al., 1987).<sup>1</sup>

New Source Performance Standards, issued by the U.S. Environmental Protection Agency (“U.S. EPA”) in 1988<sup>2</sup>, prohibited the sale of uncontrolled, unregulated wood stoves (“conventional wood stoves”) starting in 1992. Since 1992, all wood stoves are required to either use a catalytic converter or a means of advanced combustion to reduce emissions, and be certified by the U.S. EPA (“certified wood stoves”) as meeting pollution reduction targets that result in up to a 90% reduction in emissions of particulates and PAHs. To meet these targets, virtually all certified wood stoves carefully control their air-fuel ratio, and so must operate with their gasketed doors firmly closed. As a result, the scenario of post-1992 wood stoves operating with their doors open, as presented in the Draft Report, is simply not possible. Because their doors cannot be operated with their doors open, the scenario of certified wood stoves leaking PAHs into the indoor environment is not possible. The Draft Report must distinguish between the potential for leaking of pollutants into the indoor environment by conventional wood stoves, which have been prohibited from sales in the United States for the last fourteen years, and certified wood stoves.

Another example of such indiscriminate mixing of the two different kinds of wood stoves together occurred earlier in the Draft Report, which listed wood stoves as an example of a “prominent” source of indoor particulate matter.<sup>3</sup> The text does not indicate whether the cited studies discussed conventional or certified wood stoves. The distinction is extremely important and, as discussed later in these comments, should have a bearing on the relative importance and means of mitigation assigned to wood stoves. The Draft Report must not lump conventional and certified wood stoves together, but must distinguish them, both as sources and as targets for mitigation. In fact, the Draft Report should recommend mitigation measures that promote the replacement of conventional wood stoves with certified wood stoves.

II. The Draft Report Has Failed to Establish a Direct Linkage Between Emissions to the Ambient Atmosphere and Decreased Indoor Air Quality for Hearth Products.

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<sup>1</sup> Draft Report, at 72.

<sup>2</sup> 40 C.F.R. §§60.530-539 (2003).

<sup>3</sup> Draft Report, at 38.

Section 4 of the Draft Report considers existing regulations, guidelines and practices for reducing indoor air pollutants. Subsection 4.3, on Emission Limits, in fact, states that the driving force for a particular regulation that is cited may be improved ambient air rather than improved indoor air quality.<sup>4</sup> In this subsection, the Draft Report lists a number of regulations at the air district level in California that have been promulgated to control ambient emissions from woodburning appliances, such as regulations in Northern Sonoma County, San Luis Obispo, and the San Joaquin Valley.<sup>5</sup> A similar statement is made in the discussion of combustion appliances in Section 6, Prioritization of Sources and Pollutants Based on Exposure and Adverse Impact.<sup>6</sup> We are thus concerned that absolutely no connection has been shown between any reductions in emissions to the ambient atmosphere that may result from these regulations and a concomitant improvement in indoor air quality. This is a vital linchpin; without it, the regulations are of no relevance. The Draft Report must include this nexus – and preferably quantify it, because the Draft Report goes on to suggest mitigation measures.

Further, the Draft Report goes on to state that California's energy efficiency standards for new home construction contains requirements for certain hearth products, and that California's Uniform Mechanical Code, and manufacturers' instructions, require a permanently open flue damper for certain applications.<sup>7</sup> This discussion assumes, without any supporting information, that a more efficient appliance will be more beneficial for indoor air quality. We again request that the Draft Report document such a nexus, and not simply include such an assumption.

III. The Draft Report Imprecisely Concludes that Fireplaces Are a Significant Source of Carbon Monoxide.

The Draft Report cites to work by Sheldon, et al., that "a fireplace" – presumably one unit in one home – was the cause of a violation of a carbon monoxide standard in a study of 280 homes in Northern California.<sup>8</sup> This citation is problematic because it does not state whether the fireplace is a wood fireplace or a fireplace with a gas log.

The ramifications are significant if the citation purports to identify a woodburning fireplace. HPBA is not aware of any studies showing that wood fireplaces in general introduce significant amounts of carbon monoxide into homes when properly installed and operated. Based on the design, proper installation, and proper venting of woodburning fireplaces – the improper venting of which would be quickly detected by the occupants of a home – it would be extremely unlikely for a woodburning fireplace to be the cause of a violation of carbon monoxide standard. In addition, gas fireplaces and their venting systems are designed and tested to minimize carbon monoxide generation and leakage. Such incidents are generally due to improper installation and/or operation.

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<sup>4</sup> Id., at 99 (§4.3).

<sup>5</sup> Id., at 102.

<sup>6</sup> Id., at 125.

<sup>7</sup> Id.

<sup>8</sup> Id., at 46.

It also appears that, whether the one fireplace in the Sheldon, et al., study was a wood or gas appliance, its significance has been exaggerated in the Draft Report. As a result of the cited work by Sheldon, fireplaces and wood stoves are listed as a major indoor source of carbon monoxide in Table 2.1.<sup>9</sup> HPBA and the Affiliates question this conclusion if it is based on merely one fireplace. Further, notwithstanding the lack of substantiation for fireplaces being labeled as a major source of carbon monoxide, we do not see any justification in the entire Draft Report for wood stoves being labeled as a major source, especially in light of the advances in technology discussed in Section I of these comments. HPBA and the Affiliates therefore request that (i) without a clearer and stronger discussion of fireplaces as a source of carbon monoxide, fireplaces be removed from Tables ES-1<sup>10</sup> and 2.1 as a major source of carbon monoxide, and (ii) wood stoves be removed from Tables ES-1 and 2.1 as a major source of carbon monoxide.

IV. The Draft Report Has Placed Wood Stoves and Fireplaces Too High on the Ranked List of Pollution Sources for Mitigation.

Section 6 of the Draft Report presents a ranked list of pollutant sources for mitigation. The list is presented in Table 6.1.<sup>11</sup> Wood stoves and fireplaces are lumped together with other combustion appliances as the third group (of a total of eight) in importance for mitigation measures. HPBA and the Affiliates object to such a high ranking for hearth products. As has been explained in earlier sections of these comments, hearth products, when installed and operated properly, will not contribute significantly to the emissions of contaminants into the indoor air. Most appliances must meet design standards – and wood stoves must meet U.S. EPA certification standards for emissions in order to be sold in the United States. Further, work is ongoing to continue to improve our products. The industry is currently working with the U.S. EPA, under the auspices of ASTM International, to develop standards for a wood-fueled fireplace that will emit fewer particulates. Further, building codes and manufacturers have developed installation standards for hearth products that will result in proper venting.

More fundamentally, Table 6.1 does not set forth the bases and benefits of potential approaches to mitigation. For example, what will these listed approaches accomplish in terms of improving the indoor environment? Will these effects be direct or indirect (see above)? How significant will the improvements be? What size of the population will see an enhancement of their indoor air quality? Surely the effect of measures involving particle board, furnaces, skin care products, and detergents will affect more people than will measures involving hearth products. The Draft Report must have a more sophisticated approach than evidenced in Section 6 and Table 6.1. At present, hearth products are painted as a major source of emissions and a major source of improvement. Facile measures for improvement should not be offered to local governments and the general public. Table 6.1 should reflect reality (and the Draft Report) – that improving indoor air quality is complex and not amenable to simplistic solutions. HPBA and the Affiliates respectfully request that the Draft Report be appropriately amended.

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<sup>9</sup> Id., at 28.

<sup>10</sup> Id., at 3.

<sup>11</sup> Id., at 124.

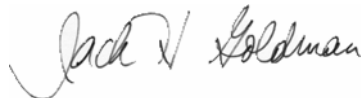
Mr. Richard Bode  
September 1, 2004  
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V. Conclusion

HPBA and the Affiliates appreciate the opportunity to review and comment on the Draft Report. We believe that, with respect to hearth products, the Draft Report must be amended in several ways. First, the Draft Report must distinguish between conventional and certified wood stoves, and recognize that the potential for emissions into the indoor environment from certified wood stoves is a small fraction of what it is from conventional wood stoves. Indeed, the Draft Report should recommend the replacement of conventional wood stoves with certified wood stoves. Second, if the Draft Report is to list and recommend control measures that reduce ambient emissions, a strong causal connection must be shown between those reductions and the improvement of indoor air quality before those control measures are embraced. The same need for a causal connection must be made for energy efficiency measures and the improvement of indoor environment. Third, the Draft Report's conclusions that fireplaces are a major source of carbon monoxide are based on anecdotal evidence and need reevaluation, particularly for wood-fueled fireplaces. The industry has never encountered such evidence. Finally, the placement of hearth products high on the ranked list of pollution sources for mitigation must take these facts into consideration; further, the ranked list must be based on a consideration of how effective the measures will be, and how large a population will be benefited by those measures.

Again, thank you for the opportunity to comment on the Draft Report. If you have any questions, please do not hesitate to contact me at (703) 522-0086 x23 or [goldman@hpba.org](mailto:goldman@hpba.org) or John Crouch in our Sacramento office at (916) 536-2390 or [crouch@hpba.org](mailto:crouch@hpba.org).

Sincerely yours,

A handwritten signature in dark ink, reading "Jack H. Goldman". The signature is fluid and cursive, with the first name "Jack" and last name "Goldman" clearly legible.

Jack H. Goldman, Ph.D.  
General Counsel/Director of  
Government Affairs